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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,298	03/27/2004	Stephen W. Day	7751-C	9305

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EXAMINER	
VO, HAI	

ART UNIT	PAPER NUMBER
1771	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/810,298	DAY ET AL.	
	Examiner	Art Unit	
	Hai Vo	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18,19,22-34 and 54-71* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *18,19 and 22-34* is/are allowed.

6)☒ Claim(s) *54-71* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Rejections of claims 54-58 over WO 200147706 have been withdrawn because the subject matter described in claims 54-58 is fully supported by the original disclosure of the parent application and thus entitled to the filing date of the continuation application 09/749,046. WO'706 is not available as prior art under 102 against claims 54-58. However, rejections of other pending claims over WO 200147706 are maintained.
2. The 102 art rejections over Tunis, III et al (US 5,904,972) are withdrawn in view of the present arguments and changed to the 103 rejections.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 54-67, and 69-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tunis, III et al (US 5,904,972). Tunis teaches a one-piece fiber reinforced core panel comprising an elongated strip including a series of longitudinal arranged foam blocks 82, a reinforcing members 84 separating adjacent blocks, a first layer 86 of continuous fibrous rovings and a second layer 80 of continuous fibrous rovings as shown in figure 8. The reinforcing member 84 is separated from the first and the second layers of continuous fibrous rovings. The fibers located between the cores comprise mats or fibrous rovings (column 7, lines 55-67). The rovings are disposed

adjacent corner of the strip (figure 15). The fibers surround the sides of the cores and terminate at the top and the bottom and extend over the core surfaces (column 8, lines 5-10). The fibrous rovings 84 extending between adjacent cores and separate from the first layer 86 and second layer 80 of fibrous rovings. The fibrous rovings 84 read on Applicants' facer sheets as recited in claim 65. Since claims 66 and 67 are completely silent as to a spacer strip not covered with any fiber materials, the subject matter of these claims do not exclude the composite structure of Tunis. Figures 16B shows an arrangement of the cores used in a composite structure wherein each of three foam blocks 132 stacked in a vertical direction is treated as an elongated strip. Alternatively, each of six foam blocks aligned in the horizontal direction is treated as an elongated strip. The resin can be a thermoplastic resin or a thermosetting resin (column 5, lines 9-12). The resin flows from the microgrooves of the core surface to the fiber material (column 5, lines 13-19). Impregnation results from resin infusion originating at the core surface and migration outwardly to the exterior of the part (column 5, lines 13-16). Likewise, the resin extends through the outer surface of the fiber material as well. Tunis discloses that as shown in figures 14-21, the fiber materials surrounding the core can be supplied as a multiaxial braid so as to carry stresses running in different directions such as biaxial and triaxial. Tunis does not teach the first layer 86 and the second layer 80 of fibrous rovings as shown in figure 8 can be supplied as a multiaxial braid. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the rovings of the second layer 80 extending helically in an opposite

direction and crossing the rovings of the first layer 86 motivated by the desire to carry stresses running in different directions.

5. Claim 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tunis, III et al (US 5,904,972) in view of Landi et al (US 5,039,567). Tunis does not teach a fiber reinforced core panel comprising an elongated strip having a portion of reduced thickness. Landi, however, teaches a sandwich structural panel for use in boat hull structure comprising a core made form a plurality of elongated serpentine strips of expanded thermoplastic material bonded together (figures 1 and 7, and column 4, lines 64-66). Likewise, the serpentine strips have portions of reduced thickness. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the foam strips having a serpentine configuration motivated by the desire to provide the panel having high tear and tensile strength and highly resilient with optimal compression load and shock absorption characteristics (see Landi, column 3, lines 19-22).

6. Claims 59-67, and 69-71 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 200147706. Day et al (US 6,740,381) will be relied on as an equivalent form of WO 200147706 for convenience. The subject matter described in claims 59-71 is not fully supported by the original disclosure of the parent application 09/749,064 and thus entitled only to the filing date of a continuation-in-part application as of March 28, 2003. The publication date of WO 200147706 is on July 5, 2001, which is more than 1 year prior to Applicant's priority filing date of March 28, 2003. Day teaches a fiber reinforced core panel 190 having a length greater than a width

comprising a series of adjacent blocks 178 of low density cellular material and arranged to form an elongated strip, a first layer 176 of fibrous rovings continuously and helically surrounding the strip along the length thereof, a second layer 177 of fibrous rovings continuously and helically surrounding the first layer on the strip along the length thereof. The rovings of the second layer extend helically in an opposite direction and crossing the rovings in the first layer (figures 13 and 14). Day teaches that the reinforcing member 180 applied to all faces of the foam strip (column 18, lines 58-60). Likewise, the blocks are separated by reinforcing member 180 which extend between adjacent blocks and between the layers. Day teaches a foam strip further comprising a reinforcing member 174 of fibrous rovings extending helically around the strip located above the planar web 180 as shown in figure 12. The helically extending rovings extend over the core surfaces (column 20, lines 50-60). The rovings 113 as shown in figure 8 reads on Applicants' rovings extending adjacent the core surfaces and parallel to the strips and having a depth into the foam blocks greater than their width. Figure 1 shows that each of strips 33 having opposite faces attached to corresponding facer 34 extending between the core surfaces of the core panel. The middle strip as shown in figure 14 reads on Applicants' spacer strip. Day teaches the reinforcing rovings and skin being impregnated with liquid resins which are subsequently fused together through the application of heat and pressure (column 23, lines 10-30). Likewise, the thermoset resin extending through the fibrous reinforcing members and an inner portion of at

least one of skins and a thermoplastic resin extending through an outer portion of the skin. Accordingly, Day anticipates the claimed subject matter.

7. Claim 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 200147706 in view of Landi et al (US 5,039,567). Day does not teach a fiber reinforced core panel comprising a plurality of elongated serpentine strips. Landi, however, teaches a sandwich structural panel for use in boat hull structure comprising a core made form a plurality of elongated serpentine strips of expanded thermoplastic material bonded together (figures 1 and 7, and column 4, lines 64-66). Likewise, the serpentine strips have portions of reduced thickness. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the foam strips having a serpentine configuration motivated by the desire to provide the panel having high tear and tensile strength and highly resilient with optimal compression load and shock absorption characteristics (see Landi, column 3, lines 19-22).

Allowable Subject Matter

8. Claims 18, 19, and 22-34 are allowed. No prior art was found to teach or fairly suggest a fiber reinforced core panel having a structure as recited in such the claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485.

The examiner can normally be reached on Monday through Thursday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hai Vo

HV

HAI VO
PRIMARY EXAMINER